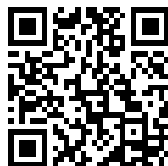
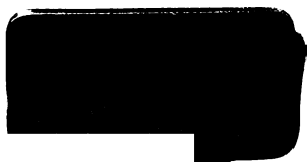

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1

INVENTION OF THE ELECTRIC TELEGRAPH.

THE CHARGE
AGAINST
SIR CHARLES WHEATSTONE,
OF
"TAMPERING WITH THE PRESS,"
AS
EVIDENCED BY A LETTER
OF
THE EDITOR OF THE "QUARTERLY REVIEW"
IN 1855.
REPRINTED FROM
THE "SCIENTIFIC REVIEW."

"MR. WILLIAM FOTHERGILL COOKE has not flinched from laying his case fully before the public; he appears not only to have nothing to conceal, but even to be anxious that a flood of light should be thrown upon this vexed question. Why does SIR CHARLES WHEATSTONE decline the challenge?" *Ed. Scientific Review*, p. 26.

LONDON: SIMPKIN, MARSHALL, & Co. BATH: R. E. PEACH.

JANUARY, 1869.

INVENTION OF THE ELECTRIC TELEGRAPH.

TO

*Editors of the Public Press, their Contributors and Correspondents,
Literary and Scientific.*

Gentlemen,—I respectfully but firmly urge upon your consideration that the influence brought to bear upon the Public Mind through the inadvertence of Editors, and the carelessness or favouritism of Writers, upon the above subject, has issued in the perversion of historical truth, and in great individual injustice.

As a safeguard to those who desire to treat that subject with justice and accuracy, all the Evidence relating to it has been published, and may be consulted at most of the Public Libraries in England and other countries.

The following Extracts from the SCIENTIFIC REVIEW show the extent to which the QUARTERLY REVIEW and other Periodicals have been pre-meditatedly "tampered" with, either under the influence of a "known name," or by servile complaisance to the eminent scientific man, who has thus built up an unfounded reputation at the expense of his Coadjutor and Benefactor.

I confidently leave to the honour and conscience of the Public Press generally the example of the few, who have already vindicated its truthfulness and dignity, by explicitly condemning, in lieu of encouraging by silence, the system of "tampering" which has so greatly prevailed, especially in the interests of "the scientific favourites of the London coteries."

With grateful thanks to THE FEW who have examined the Evidence, and manfully expressed their independent convictions,

I am, Gentlemen,

Your obedient servant,

T. FOTHERGILL COOKE.

Bath; January, 1869.



Telegraph-Invention Controversy.

PREFACE.

Magna est veritas, et prævalebit.

THE research and mastery of the subject, evinced by the editorial article of the *Scientific Review* for November, invest the writer's conclusions with that convincing power to which more superficial notices could not attain.

The friends of Mr. WILLIAM FOTHERGILL COOKE accept this judgment. They regard it as unimpeachable; and believe it will prove the final step towards that decisive issue which they had determined to compass.

The adjudication is the more satisfactory, as neither Mr. FOTHERGILL COOKE nor his friends had access to the Editor, neither were they aware of his intention to intervene. This statement is emphatic and unreserved.

The June number, in which the subject was introduced, met with accidentally towards the close of that month, first apprised them of the effective advocacy of the truth volunteered by the Review.

The Editor subsequently (p. 26,) announced his intention to search out the facts for himself, and to publish his independent views, opening his columns to both parties. He was thereupon furnished with the documents and evidence on both sides, including those in the custody of my brother's solicitor, Mr. ROBERT WILSON, the letter of the Editor of the *Quarterly Review*, and the correspondence connected with it.

He has himself stated that he has "carefully examined" those documents, perused the letter of the Editor of the *Quarterly*, and awaited for two months some further explanation from Sir CHARLES WHEATSTONE.

As regards the charge of "Tampering with the Press," attention has been concentrated upon the particular instance of the *Quarterly Review**, by the revelations contained in Col. ANDREWES' letter of July 9th. The reputation and influence of that periodical, and the express statement *in the writing and under the signature of the Editor*, that the article therein was "exclusively prompted by Sir CHARLES WHEATSTONE," give that specific case an obvious prominence; but the practice was uniform. I mention two instances only.

Vice-Admiral SMYTH, one of the most constantly cited authorities for "the definite position conceded, &c," states explicitly that he received from Sir CHARLES himself the information on which he relied.

Again, the *anonymous J. D.*, eulogised by the *Times* as its "courageous correspondent," who elicited the

* For other instances, see "Authorship of the Practical Electric Telegraph," Letter vii., pp. 45—52, and pp. 114—117.

leading articles which demanded national honours for WHEATSTONE on the *sole* ground of *exclusive origination and invention of telegraphy*, names WHEATSTONE no less explicitly as the only source of his "private" information:—"I was *admitted* many years ago," he tells us, "to WHEATSTONE'S laboratory, when he PRIVATELY REVEALED and demonstrated his invention of telegraphic communication *to the amazement of all present!*"

Without any wish to adopt an aggressive course against Sir CHARLES WHEATSTONE, it is absolutely essential to record and widely disseminate the facts ceded or proved.

I. The main fact is now universally admitted by the public press, that the Brunel Award, with its detailed "statement of facts," is proven, and that Mr. FOTHERGILL COOKE is entitled to stand alone as the originator of the Practical Electric Telegraph.

Sir CHARLES WHEATSTONE confirmed this fact by his signature in 1841, and re-affirmed it in his pamphlet of 1855; and a recent publication states as authentic, that his motive for declining to accept the duplicate Albert gold medal of 1867 was his "cordial acknowledgment of Mr. COOKE'S claim for 'the practical introduction.'"

II. The second fact proved is the "exclusive prompting by WHEATSTONE" of the article in the *Quarterly Review*—that article which, without hyperbole, misled the whole reading world.

This is important as sweeping away the foundation by which Sir CHARLES WHEATSTONE'S claim to the

Practical Telegraph is sustained—to use his own expression, “the position which he has invariably claimed for himself in the words of the *Quarterly Review*.”

A limited time may yet be allowed to Sir CHARLES to essay the disproof of the letter of the Editor of the *Quarterly*, given *in his own writing and under his signature*, “W. ELWIN,” in the words quoted above.

Failing to disprove the testimony of the Editor, Sir CHARLES WHEATSTONE must be found guilty on the charge of “Tampering with the Press for his own glorification *to the injury of another*.”

Mr. FOTHERGILL COOKE’s position being now admitted, Sir CHARLES WHEATSTONE is on trial.

The Editor of the *Scientific Review* has announced—and the attention of Sir CHARLES WHEATSTONE is hereby called pointedly to the fact—that he

“Will still hold his columns open for such reply or explanation as the accused may think fit to furnish.”

T. F. C.

Bath; Nov. 19th, 1868.

“SCIENTIFIC REVIEW.”

November, 1868 :—LEADING ARTICLE.

THE ELECTRIC TELEGRAPH.

SIR C. WHEATSTONE'S SHARE IN ITS INVENTION.

IN a former number we referred to a pamphlet as emanating from Sir C. Wheatstone, and embodying his claims as inventor of the Electric Telegraph.* This pamphlet reached us about the end of the month, when little time was left for discussion of its contents. We had already received the printed proofs of communications upon Mr. Fothergill Cooke's side of the question, and had no little hesitation about the propriety of publishing them until we should have the opportunity of investigating Sir C. Wheatstone's claims. Finding, however, that these communications had reference, not to peculiar claims in respect of invention, but to charges made against Sir C. Wheatstone for his alleged tampering with the press, we felt it our duty to publish them, so that Sir Charles might have the opportunity of rebutting or explaining these very grave allegations. Two months have now elapsed since their publication in our columns, but as yet Sir C. Wheatstone has not thought proper to notice the charges which have been so directly made against him. We would fain hope, in the interests of science, and for the sake of a name that we have been accustomed to honour in connection with scientific research and brilliant invention, that sooner or later Sir Charles will be enabled to clear himself of a charge, which, if substantiated, would alike degrade him and dishonour the rank which has been conferred upon him.

* See this reference, p. 15, *infra*.—T. F. C.

We would form no hasty conclusions upon a matter of such gravity, and we will therefore still hold our columns open for such reply or explanation as the accused may think fit to furnish.

The pamphlet to which we referred was published in 1855,* in answer to a pamphlet published by Mr. Fothergill Cooke, in 1854. It was re-published by Mr. Cooke himself in 1857, along with his own pamphlet, with his reply, and with other matter and documents, bearing upon this controversy.

We have heard of no other publication upon the subject from Sir C. Wheatstone, and we therefore take it for granted that the pamphlet in question contains all the main features of his case. We could have wished to find the case put somewhat more clearly and explicitly, but, knowing how difficult it is for any inventor to distinguish between the purely original and the partly borrowed ideas which flow through his brain, we make every allowance for a certain confusedness of statement, and we will endeavour to extract the pith of an argument in which we believe the whole civilized world is directly interested.

"Mr. Wheatstone will show . . . that the facts sustain the position which he has invariably claimed for himself, *and which cannot be better stated than in the words of the Quarterly Review* . . . that Mr. Wheatstone was 'the first contriver of the Electric Telegraph, in the form which made it available for popular use.'" (p. 5.)

Such is the text of the argument, part of which we print in Italics, because it may be interesting to read it in connection with the following sentences quoted from the letter of the editor of the *Quarterly Review*, published in our August impression:—"The author of the essay was prompted exclusively by Wheatstone."—"I never considered the question as between Cooke and Wheatstone, for the simple reason that I did not know that the former ever disputed the pretensions of the latter." We cannot entertain the slightest doubt as to the authenticity of the letter from which we make these quotations, for we have seen it,

* A Reply to Mr. Cooke's pamphlet, "The Electric Telegraph; was it invented by Professor Wheatstone?" London: R. Taylor and W. Francis, 1855.

and we are thus forced to the sad conviction that Sir C. Wheatstone, when he cites the verdict of the *Quarterly Review*, is simply quoting himself. Shall we call this an error in taste and judgment, or ———? but the facts of the case are not altered by the indiscretion of an advocate, and to these facts we will gladly betake ourselves.

There is no doubt that before 1836 Professor Wheatstone in common with many other men of science at home and abroad, had visions of electric telegraphy floating before him, and that he especially in England devoted much time and thought to researches upon the laws of electrical action, and to investigations as to means of communicating signals by electricity over considerable distances. We believe it is also admitted that Prof. Wheatstone had at or about that time an instrument in his classroom, by which he actually did convey signals through several miles of wire. About the same time Mr. Fothergill Cooke, then travelling abroad, witnessed experiments with electrical apparatus transmitting signals. The whole scientific world was aware of the existence of this latent power, and efforts were being made, with more or less success, towards its practical development. It does not, however, appear that any of the men of science, who busied themselves about this subject, had the least idea of the magnitude and importance to which a system of electric telegraphy might attain if it could be practically worked out. Even Prof. Wheatstone himself had notions so humble as to the commercial importance of such a system that his intention "when he had finished his experiments, was to publish the results, and then allow other persons to carry them out in practice." (p. 7). Mr. Cooke, on the other hand, who did not profess to be a scientific man, was so struck by the experiments which he witnessed that he at once formed in his mind the conception of a great system, and determined to give up his profession and devote himself thenceforward to its development. In the year 1836 he prepared a pamphlet or sketch, embodying his ideas as to this system, and this sketch, read with our present knowledge and experience, is as it were an ample and accurate prophecy of that great invention which

"has brought the whole world within one instant of time."* Up then to the date of 1836, we find that men of science, after investigating and contriving for many years, had got so far as to exhibit ingenious instruments in their class-rooms, and to determine that they would "publish the results, and allow other persons to carry them into practice." At the same date we find a man who did not claim scientific attainments, developing, on paper at least, the very system which has made its way, and hastening to England to carry out in practice what he had imagined in his brain. Feeling the need for more scientific knowledge than he possessed, Mr. Cooke got an introduction to Prof. Wheatstone, as the man who had most fully studied the laws of that power which he desired to enlist in his service. This introduction led to a partnership in patents, and in the commercial business which was expected to result from their "exploitation." The partners for some time worked harmoniously, till Mr. Cooke, feeling aggrieved that Prof. Wheatstone claimed or got more than his fair share of credit in the various parts of the inventions on which they were engaged, remonstrated with his partner, and finally got the matters in dispute between them referred to arbitration. It is not our purpose to discuss the details of this arbitration, or to refer to the award, which has long been before the public. There is much that is personal and, to say the least, unsatisfactory in the discussions arising out of this and other transactions, and in all this we do not care to mingle. Our business is to analyze the whole system of electric telegraphy, and to ascertain, as accurately as we can, the share which each of the claimants has taken in its development.

We cannot gather from Sir C. Wheatstone's own statement that he claims credit for anything in this great system, except for the invention of instruments for giving and receiving signals, and for improvements in the construction of the magnets employed. Some of his instruments were exceedingly beautiful and ingenious, but we are not aware that any of them were used in practice. His improved magnets, and his plan of mounting

* See this SKETCH, "Authorship of the Telegraph," pp. 97-104.—T. F. C.

them vertically on horizontal axes, were of the greatest practical value, and we believe neither Mr. Cooke nor any one else would willingly underrate the merits of these inventions, nor of Sir C. Wheatstone's elegant contrivances for measuring resistance to electric currents in passing through long conductors. But in discussing the invention or origination of a great system, we are bound to look at all its component parts, and to ask who suggested, not a few beautiful improvements here or elegant contrivances there, but those great features which have rendered it practically available and commercially profitable.

Analysing the system with this view, we may reduce it to a few leading points, which may be thus stated :—

I. A battery or apparatus for generating the power.

II. A conductor for conveying it over distances.

III. An instrument for giving and receiving signals.

Each of these great features resolve themselves into numerous subsidiary details with which our limits do not permit us to deal except in the most general terms. It is not our business to look at the system as it now is, with the improvements of many subsequent inventors imported into it; we have to regard it as it was when it emanated from Cooke and Wheatstone. The epoch at which these joint efforts may be taken to have terminated is that at which Professor Wheatstone sold his interest in the patents for £30,000, viz., in 1845, at which time the system was very largely developed in England and abroad.

I. The Battery.

In this Prof. Wheatstone did nothing. Mr. Cooke applied the Sand Battery, which was the only one used for many years. It was the only battery known at the time which would keep in action for a good many hours without requiring attention. *

II. The Conductor.

This, which involved the greatest expense and difficulty, was the part of the system to which Mr. Cooke devoted the most earnest attention, and in which he achieved the highest success. He felt, as any one taking a commercial view of the system

* PILE à sable.—La plus simple de toutes les piles, la plus employée en Angleterre sur les lignes télégraphiques, est celle de M. Cooke. Une pile neuve montée avec soin peut fonctionner pendant six ou huit mois.—*Moigno*, 1862.—T. F. C.

must have felt, that almost its whole success was to depend on perfecting the insulation of the conductors, on reducing their number, and on cheapening their material and application. We accordingly find that from the first Mr. Cooke laboured strenuously in these directions. To him, and to him exclusively, we owe the introduction of the "earth circuit" instead of "return wire," and of the plan, now universally applied in land telegraphs, of suspending galvanized iron wires on glass or earthenware insulators mounted on poles. With a view to economy and simplicity, Mr. Cooke always advocated and applied instruments requiring at most two wires, and thus, while Wheatstone's elegant contrivances, requiring some five wires, remained as pretty toys, Cooke's double-needle telegraph came into universal use.

While we do not find that Wheatstone ever did anything whatever for the conductors, we find Cooke originating the reciprocal system, by which one wire is made to do duty both to and fro, with the contrivances necessary for rendering it so available. We find him also inventing a "Detector," by which faults of insulation or breaches of conduction were to be traced, and without which, or something equivalent to it, the establishment and maintenance of a system of conductors was practically impossible. To Mr. Cooke, also, we owe the contrivance of means for working intermediate instruments, and of the alarum which calls the attention of the operator to the message which he is about to receive.

III. The instruments.

In this department, and in this only, does Sir C. Wheatstone appear to have done any real work. His is a mind eminently adapted to the combination of ingenious contrivances, either originating with himself or drawn from other sources. A mind of this turn is always marked by a peculiarity which all persons that are in the habit of meeting inventors must have observed in them. Such minds assimilate the food presented to them so rapidly and so completely, that they utterly fail to distinguish between what is their own and what has been derived from others. A great inventor never sees a contrivance that he has

not previously devised himself, and while he may give the actual contriver credit for working out or embodying the design in practical shape, he cannot forego the credit for the original idea. A contriving brain, always at work, must pass in review designs innumerable, and the practical embodiment of any such design presents itself as an old acquaintance. Nay, more: a mind of this cast seizes so readily, and understands so clearly the points of an invention presented to it, that it comes before it as something not now learned for the first time, but known familiarly of old. From such a weakness—if weakness it should be called—perhaps Sir C. Wheatstone is not altogether free; and when he claims inventions which others claim also, we give him credit for perfect honesty even in cases where he may be mistaken as to the paternity of the design in question. Of his contrivances for electric telegraphy, about which there is no dispute, the following may be taken as a brief abstract.

The commutator or key-board with which he operated in his class-room before his acquaintance with Mr. Cooke. This has never been practically used. The same is to be said of his Hatchment Dial Instrument, notwithstanding its elegance and simplicity.

His mode of mounting vertical needles on horizontal axes was a very great improvement, and one that has come into universal use along with his improved magnet.

We do not discuss those inventions which were embodied in joint patents along with Mr. Cooke's contrivances, because we would avoid entering into a dispute about the relative merits of the two parties in such cases. Fortunately there are only two such, the joint patent of 1840 for Mechanical Telegraphs * which were never used, and that for the "discharger," now called the "relay," which has come into universal use. In this latter case the only one of importance—perhaps the fairest thing to do is to let each have half the credit, as each had half the patent.

Having carefully examined the patent specifications and other

* It was Mr Cooke who first applied the attraction produced by voltaic electricity to the descent of a clock-train, to control its motion or to ring a bell—an important step in practical telegraphy.—*Cromwell F. Varley*, 1868.—T. F. C.

accessible evidence in this controversy, we are forced to the conclusion that Sir C. Wheatstone's contributions towards the establishment of the electric telegraph as a practical system resolve themselves into two which are his own, viz., the vertical needle and the improved magnet, and a third, of which he may take half the credit, viz., the relay. *

With the many beautiful inventions which bear his name, but which bear dates posterior to 1845, we have nothing here to do. At that time the electric telegraph was a realised fact—realised by the joint efforts of Cooke and Wheatstone—and all that the world cares to know is to whether of these two men they are to ascribe the honour of its practical realisation, or, if to both, in what just proportions to each.

While such was the inventive work done by the partners, the practical or commercial work fell exclusively to the share of Mr. Cooke. He it was that met directors, that attended meetings, that suggested lines, gave tenders for works and executed them—in fact, *pushed* the system into use; and from all we have read upon this vexed question, and as much from Sir C. Wheatstone's own statements as from any other source, we gather that but for Mr. Cooke's indomitable energy and perseverance, the electric telegraph would have remained to this day the scientific toy which Mr. Cooke originally found it. The very nature of the partnership that subsisted between Cooke and Wheatstone,† the share of the work that fell to each, and the division of the resulting profits, demonstrate beyond a doubt that, in the words of the award "Mr. Cooke is entitled to stand alone as the gentleman to whom this country is indebted for

* "MR. WHEATSTONE has always represented the secondary or relay circuit as a joint invention."—*Wheatstone's statement in his Reply*, 1855; vol. i, p. 56.—T. F. C.

† THE terms of their partnership vested in Mr. Cooke, as the originator of the undertaking, the exclusive management of the invention in Great Britain, Ireland, and the Colonies, with the exclusive engineering department, as between themselves, and all the benefits arising from the laying down of the lines, and the manufacture of the instruments. As partners standing on a perfect equality, Messrs. Cooke and Wheatstone were to divide equally all proceeds arising from the granting of licenses, or from sale of the patent rights; a per-centage being first payable to Mr. Cooke, as manager. Professor Wheatstone retained an equal voice with Mr. Cooke in selecting and modifying the forms of the telegraphic instruments.—*Brunel Award*, 1841.—T. F. C.

having practically introduced and carried out the electric telegraph as a useful undertaking."

To a contriving brain invention comes easy; nay, it is a source of positive pleasure. Real work is generally far from easy, and has little of the pleasant about it. Such work is the forcing upon an unbelieving world of a contrivance which is treated as a chimera till it is practically realised. Only those who have been engaged in such work have the most remote idea of the difficulties, the obstacles, the resistances, the discouragements, all the disheartening influences that have to be encountered and overcome—of the struggling against vested interests, the hoping against hope, the days of deep solicitude, and the nights of dark despair which attend such an enterprise. Did Sir C. Wheatstone take his share in this work for the Electric Telegraph? He complains of unfair division of profits, although the sum which he received was named by himself. May not Mr. Cooke complain of an unfair division of the honours, those having been apportioned without consulting him, without even regarding the facts?

Before we conclude, let us look to a case in many respects parallel to that of the telegraph, we mean the railway system. In order to make railways practical, many contrivances were required—permanent way with its sleepers, chairs, and rails—points and switches—locomotives—carriages, signals—and in all these departments the name of inventors is Legion. But who shall say that the improver of the fire-box of a locomotive, or the contriver of a "patent buffer," was the originator or inventor of the railroad? If Sir C. Wheatstone did anything more towards the realisation of the electric telegraph than any one of these inventors did towards the realisation of the railway, in Heaven's name let him come forward and state his case, manfully and openly, not through leaders in the *Times*, and still less by articles in *Quarterly Reviews*, "prompted exclusively" by himself, and afterwards quoted by himself as an authority for "his title to the definite position conceded to him as 'the first contriver of the electric telegraph in the form which made it available for popular use.'" (p. 37.) We cannot bring ourselves to believe that a

man so high in scientific attainments, and one who accepts from his Sovereign a title, conferred as it used to be only on the honourable and the brave, could condescend to the assumption of credit where it is not due, much less to any underhand means of bolstering up a credit which a grateful public would freely award to him who has conferred on them the boon of the Electric Telegraph.

* * One of the "communications on Mr. Cooke's side, the proofs of which had already been received," viz., that which contains "the letter of the editor of the *Quarterly Review*" referred to in the foregoing leader, is the following letter from Col. Andrewes, R.H.A.—T. F. C.

“SCIENTIFIC REVIEW.”

August, 1868 :—COL. ANDREWES' LETTER.

WILLIAM FOTHERGILL COOKE WAS THE SOLE
ORIGINATOR AND INVENTOR OF THE ELEC-
TRIC TELEGRAPH AS A *PRACTICAL SYSTEM*.

To the Editor of the SCIENTIFIC REVIEW.

SIR,—I AM one of those friends of Mr. Fothergill Cooke, who united themselves with his brother, to maintain and defend his claim to be (as adjudged by a legal award in 1841) “*Entitled to stand alone as the gentleman to whom this country is indebted for having practically introduced, and carried out, the Electric Telegraph as a useful undertaking.*” As a near relative of Mr. Fothergill Cooke, I feel sure you will allow me a hearing through the columns of your Review, in which you have declared yourself “free to publish such communications as may be made to you on either side of the question.” Mr. Cooke's friends have taken up his cause on the same ground as that on which he has so ably and fearlessly maintained it from 1837 to the date of his letter in your last number.* He and we, his friends and relatives, believe that his claims are true, and that they are as capable of being proved and defended in 1868, as they were in 1841, and we maintain that, as in '41 our strongest witness was Professor Sir Charles Wheatstone himself, so he is now, not only because he then signed his cordial and grateful assent to that *award* to which we appeal, but because he at that

* See this letter, p. 22, *infra*.—T. F. C.

time laid before the arbitrators a tissue of statements which were then proved unfounded, and can be so still.

Mr. Cooke is now ready, twenty-seven years after he gained his cause to have it tried again on the same evidence, and he now authorises the publication of his *reserved* evidence, that Sir Charles Wheatstone has, ever since he accepted the judgment of Sir Isambard Brunel and Professor Daniell, systematically sought to undermine that judgment:—

Firstly, "By obtaining by private letter in (1843) a private interpretation of that award from Professor Daniell as his friend, the very existence of this 'private interpretation' thus improperly obtained being kept a profound secret from Mr. Cooke, whom it was intended to injure, for two years. . . . till an incautious allusion to it in 1845 excited suspicion, and Mr. Wheatstone found himself compelled, by Mr. Cooke's challenge, to publish it in 1856; and that it was unscrupulously used behind his back during that interval, both in this country and on the continent."—(Rev. T. Fothergill Cooke's pamphlet, p. 48.)*

Secondly, "By representing on the Continent a 'memorandum of agreement' as the 'award of the arbitrators,' by which many were misled, including the Abbé Moigno, who innocently published the deception far and wide, in his celebrated work on the Electric Telegraph, as a 'corrected version' of the arbitrators' judgment."—(Pamphlet *idem*, p. 52).

Thirdly, "By deliberately suppressing the award when 'prompting exclusively' the writer of an article in the *Quarterly Review*, in which he not only misrepresented himself as the practical inventor of the Electric Telegraph, but further misrepresented Mr. Cooke as a 'mechanic' in some way useful to him!"

Under these three serious charges, repeatedly forced upon his attention, Professor Sir Charles Wheatstone has remained

* "Authorship of the Practical Electric Telegraph." R. E. Peach, Bath, Simpkin, Marshall and Co., London, 1868.

significantly silent for more than a year and a-half; he has complacently accepted honour as the man who originated the conception, and realised the fact, by which "the whole world has been brought within a moment of time." Such are the charges, in common with many others that remain undenied: they may be found detailed and substantiated in the Rev. T. Fothergill Cooke's pamphlet. This pamphlet has been largely circulated, and I much doubt whether the badge of *honour* recently conferred on the Professor has proved a talisman of sufficient power to safeguard him from a decline in the honourable consideration of a large proportion of the Fellows of that Royal Society of which he is a member.

You, in ordinary justice, have opened your columns to his defenders, and, of course, also to Sir Charles Wheatstone, if he can only be induced to speak for himself.

That *he* and they may know, *without any ambiguity*, the grounds of the third charge (the two former having been fully stated in the pamphlet above quoted), I beg to furnish you with the correspondence on which it rests:—

"1, Copthall Buildings, 6th March, 1855.

"MY DEAR COOKE,—We have got at the editor of the *Quarterly* accidentally, but in the best possible way. Read and return the enclosed by return of post, as I should like to send back the editor's letter to his brother.

"Yours truly,

(Signed) "ROBERT WILSON.

"William Fothergill Cooke, Esq.,

"Oaklands, Stockbridge."

"Lincoln's Inn, 6th March, 1855.

"MY DEAR WILSON,—When I was at the board on Friday my brother happened to come here, and read Mr. Cooke's pamphlet, which was lying on the table. I send you a letter which I received from my brother on the subject this morning. It was intended only for me, but I don't see that there would be any harm in Mr. Cooke's seeing it, if you think it would be interesting to him.

"Yours truly,

(Signed) "TH. ELWIN.

"Robert Wilson, Esq.,

"1, Copthall Buildings."

March 5th, 1855.

"MY DEAR MAP,—I looked in on Friday, and stayed about an hour at your rooms; but as your clerk could not tell me when you would return, I thought it useless to stay longer. I read, while there, Cooke's pamphlet on the Electric Telegraph, and I saw on the title page that your copy was from the author. Do you know anything of him? I did not write the article on the telegraph, but I wrote that portion relative to the merit of the respective discoveries of which Cooke complains. The author of the essay was prompted exclusively by Wheatstone, and, as I thought, had underrated the claims of foreign discoverers. I studied the question for myself, and endeavoured to state it with perfect truth; which, as regards the comparative claims of English and foreign inventors, Cooke admits to have been done; but I must admit that I never considered the question as between Cooke and Wheatstone, for the simple reason that I did not know that the former ever disputed the pretensions of the latter. It is not impossible that some injustice may have been done in consequence. When his volume of evidence, and the reply which I understand Wheatstone is preparing, have been published, I will go into the matter; and if Cooke has been wronged, I will say so in the *Review*. I left, by accident, a little book of Forster's on your desk; as it is a gift, take care of it for me.

"Ever your affectionate brother,

(Signed)

"W. ELWIN."

Professor Wheatstone's "Answer" did not appear for a year after, and Mr. Cooke's "Reply" two months later. The evidence laid before the arbitrators was printed in the second volume of Mr. Cooke's work, and the "Pamphlet," "Answer," and "Reply," occupy the first volume; both have been forwarded to you. Every statement of Professor Wheatstone was disproved by the "Reply." The "Reply" has never been met by Professor Wheatstone; but the *Quarterly Review*, after two years' delay, neglected the controversy as a thing of the past. The arbitrators' award has never been attacked or even questioned to this hour, so, under that decision, William Fothergill Cooke is still, in the sense implied by the award, entitled to stand alone as the gentleman to whom this country—aye, and the world too, are indebted for the realisation of the electric telegraph, which he planned alone, and carried out nearly single-handed, up to the formation of the Electric Telegraph Company, in 1846. That position is unassailable by any of Sir

Charles Wheatstone's weapons; and in the meantime it rests with him to clear himself (if he can) from the charge of having endeavoured, by means forcibly characterised on more than one occasion, to supplant his former associate in the great scientific undertaking which would so have redounded to the honour of *both*, had *he* refrained from a course alike unworthy of his position as a man of science, and altogether at variance with the honourable instincts of a gentleman. It was but an extreme sentiment of etiquette which caused Mr. Cooke to refrain for thirteen years from the publication of these letters which have so strong a bearing on those claims to public recognition that has been so long withheld. * * *

I am, Sir, your most obedient servant,

WILLIAM G. ANDREWES,

Lieut.-Colonel, R.A.

The Chantry, Ipswich, July 9th, 1868.

("In a former number we referred to a pamphlet, &c." p. 1, *supra*.—The notice thus referred to by the Editor of the *Scientific Review* was appended by him to Col. ANDREWES's letter as follows.)

Since the above was in type, we have received a pamphlet which, though anonymous, is evidently written or inspired by Sir C. WHEATSTONE, being "A Reply to Mr. COOKE's Pamphlet." In the short time left at our disposal, we could not do justice to a review of its contents, which we must reserve for a future number. We only notice it now in justice to Sir C. WHEATSTONE, because in a former number we remarked on his silence when a question so deeply affecting his fair fame was before the public.—
ED. S. R.

* * The subject was introduced by the *Scientific Review* in the number for June, 1868, by the following Editorial Article:—

“SCIENTIFIC REVIEW.”

June, 1868 :—EDITORIAL ARTICLE.

THE ELECTRIC TELEGRAPH. — IS COOKE OR WHEATSTONE THE INVENTOR ?

IN our endeavours to trace the progress of discovery from month to month, and to watch the practical applications of science to the mechanical and chemical arts, we are apt, amid the crowd of present objects demanding all our attention, to neglect matters of deepest interest in the past. As reviewers of science, however, and as representing an Institution devoted to the interests of inventors, we have duties which render it incumbent on us from time to time to look back upon the history of discovery or invention, and to clear away the obscurity or distortion in which oblivion or misrepresentation may have involved some of the most interesting questions. In fulfilling this task, we have more than once had to controvert statements made by foreign writers, with a view to elevate their countrymen as discoverers or inventors at the expense of ours. It is no less our duty to intervene when Englishmen dispute such matters among themselves, and especially when our intervention can help to secure fair and honourable dealing in the controversy.

One of the greatest, if not the very greatest, of the inventions of the age in which we live is, unfortunately, the subject of dispute. There are two claimants to the honour of having invented the electric telegraph. One of them, William Fothergill Cooke, boldly claims the honour, and defies the world to impeach the justice and honesty of his claim. The other, Sir C. Wheatstone, has, in some way, had the honour thrust upon him, per-

haps neither unwillingly nor unwittingly, and, while he makes no direct claim to it as his right, appears to accept it as justly his, by passing, *sub silentio*, all public statements attributing it to him. This gentleman, until lately known as Prof. Wheatstone, has had his name long before the public as a discoverer and inventor, in connection chiefly with electricity, acoustics, and musical instruments. He is believed to be profoundly versed in the branches of science to which he has chiefly devoted his attention, and he has undoubtedly a great share of those inventive and adaptative faculties which enable a scientific man to turn his knowledge to practical use. A title has recently been conferred on him, "in consideration of his great scientific attainments, and of his valuable inventions," as has been stated by some of the leading journals in their brief notices of his elevation to knighthood. But a very general notion prevails that this honour has been conferred specially and exclusively in recognition of Professor Wheatstone's priceless services to the public as inventor of the electric telegraph. If the whole of England were polled upon this question, we believe a vast majority would endorse the opinion that to Sir C. Wheatstone, and to him alone, is due the honour of this great invention. Out of every thousand who would venture an opinion at all, about ten might be found who had heard of such a person as Mr. Fothergill Cooke, and of those ten perhaps nine would mention him as a sort of practical mechanic, who was useful enough to Wheatstone in carrying out and putting to work the mechanism which the real inventor had devised. Let us ask if this, the almost universal view of the subject, be the correct one. The facts of the case are all accessible, the competitors are both alive, the whole history of the invention has passed during the existing generation. It is not necessary for us to hazard any opinion; we have only to place before the public a few of the leading circumstances, and leave our readers to form their own judgment.

For many years philosophers, knowing the fact that electricity could be conveyed by conductors over great distances, had made attempts to employ it as an agent of communication. Signals

were made by causing it to sound bells, to move pith-balls, to show sparks, to decompose water, to explode gunpowder or gaseous mixtures. In 1802 Romagnosi discovered that the passage of a galvanic current deflected a magnetic needle. In 1820 Oersted independently discovered the same phenomenon and published his discovery, and Ampère suggested that the deflection of the needle might be used for signalling at a distance. In 1824 Schweigger surrounded the needle by a coil, and thus rendered Ampère's suggestion practicable. In 1830 Schelling actually made a telegraph apparatus with five needles and an alarum. In 1831 Faraday made his principal discoveries in magneto-electricity, and in 1833 Gauss and Weber applied magneto-electricity to Schelling's telegraph, and Steinheil greatly improved their apparatus. In 1835 Schelling simplified his telegraph to one needle, and Wheatstone showed it at King's College. In 1836 Muncke, at Heidelberg, showed W. F. Cooke a model of Schelling's telegraph, and in the same year Cooke, deeply impressed with the practicability and importance of electric telegraphy, applied himself exclusively to an elaboration of the mechanism for this purpose. One of the first advances he made, that of rendering the communication reciprocal, was embodied in an instrument along with a new alarum. In the same year he invented his detector, drew up a hopeful and earnest prospectus of the telegraph, made several instruments, and negotiated with the Liverpool and Manchester Railway for their introduction.

Up to this time, 1836, Wheatstone, in common with electricians at home and abroad, was busy adding fact to fact and discovery to discovery. He experimented in his lecture-room with great lengths of wire upon the velocity and force of transmitted currents, and invented modes of permuting and commuting signals. In 1837 Cooke was introduced to Wheatstone, as a scientific gentleman capable of co-operating with him most usefully in bringing out the great system which he had at heart. They took a joint patent and entered into partnership, under which arrangement they worked successfully and harmoniously for several years. At length, Mr. Cooke, finding that, as the

electric telegraph came to be known, the public talked of Wheatstone as the inventor, completely ignoring him, requested his partner to remove this misapprehension. Prof. Wheatstone (as Mr. Cooke says in a letter to him) "spoke fairly, but did nothing," and, finally, "openly assumed the whole merit of the invention." Mr. Cooke required that their difference should be referred to arbitration, and Sir M. I. Brunel and Professor Daniell were empowered "to determine conclusively, and in what shares, and with what priorities and relative degrees of merit," the two partners "were the co-inventors of the electric telegraph." The arbitrators entered on their duties,—investigated fully and fairly a great mass of oral and documentary evidence, and finally, in 1841, gave an award, which, after stating the history of the connection between the two disputants, concluded with the following paragraph:—

"While Mr. Cooke is entitled to stand alone, as the gentleman to whom this country is indebted for having practically introduced and carried out the electric telegraph as a useful undertaking, promising to be a work of national importance; and Professor Wheatstone is acknowledged as the scientific man whose profound and successful researches had already prepared the public to receive it as a project capable of practical application; it is to the united labours of these gentlemen, so well qualified for mutual assistance, that we must attribute the rapid progress which this important invention has made during the five years since they have been associated."

The award was accepted by the disputants in a joint letter, as follows:—

London, 27th April, 1841.

GENTLEMEN,—We cordially acknowledge the correctness of the facts stated in the above document, and beg to express our grateful sense of the very friendly and gratifying manner in which you have recorded your opinion of our joint labours, and of the value of our invention. * * *

Sir M. I. Brunel, and
J. F. Daniell, Esq., Prof., &c.

WM. F. COOKE,
C. WHEATSTONE.

This arbitration appears to have soldered-up for a time the division between the partners, but not for long. Professor Wheatstone was still generally reputed to be the sole inventor of the electric telegraph, with Mr. Cooke as a business assistant;

and at length, in 1854, an article in the *Quarterly Review*, of the inspiration if not the authorship of which Mr. Cooke openly accuses his partner, confirmed the public opinion as to Professor Wheatstone's exclusive merits. It is singular that Professor Wheatstone has not disowned the part which Mr. Cooke accuses him of having taken, in prompting this one-sided article. Nor has he denied his being a party to insinuations, current about the same date, to the effect that Mr. Cooke had got the lion's share of the profits, while Professor Wheatstone had not received all the money he was entitled to. Mr. Cooke has openly published these accusations, and a fair and candid statement as to how the profits were apportioned with his partner's consent. In selling certain joint interests in their patents, Professor Wheatstone was asked to name his own price, and it appears that he received his price in full. That Mr. Cooke made more by the invention followed, first from the terms of copartnership, which gave him the exclusive title to a large part of the profits accessory to its success; and, secondly, from the fact that while Professor Wheatstone discounted his share of royalties in hard cash, Mr. Cooke took large risks with his portion. There may be a sort of rude justice in the idea that while Mr. Cooke has pocketed a very large sum of money for the invention, Professor Wheatstone should have had his poor pittance of some £33,000 supplemented by a title and by all the honour and glory. We cannot, however, believe for a moment that Sir C. Wheatstone would rest under such imputations as have been cast upon him in this matter, unless he had the means of answering them. Why does he not do so? The public only desire to know the truth. They are anxious to honour the man through whom, in the language of the *Times* (Oct. 10, 1866), "the whole civilised world is now brought within an instant of time." "Wheatstone has done this," continues the same journal; "others have reaped the harvest of riches and honour." Are such statements true or false; and if true, how can they be made to accord with the award of Sir M. I. Brunel and Professor Daniell? If to Wheatstone "this country be indebted for having practically introduced and carried out the electric tele-

graph as a useful undertaking," no profit can be too great, no honour can be too high, for him. But if, as the award distinctly says, "Mr. Cooke is entitled to stand alone" in this, the appropriation of honour due to him, nay, the mere omission to contradict the false attribution of such honour, must entail upon him who would "strut in borrowed plumes," a shame great in proportion to the glory of the plumes which he is accused of having borrowed.

The Rev. T. Fothergill Cooke has published a pamphlet on the claims of his brother in respect of the "Authorship of the Electric Telegraph." (Peach, Bath; Simpkin and Marshall, London.) To this we would refer our readers for more ample details than our limits permit us to furnish.

* * The following is Mr. Fothergill Cooke's Letter referred to at page 11.

“SCIENTIFIC REVIEW.”

July, 1868 :—MR. FOTHERGILL COOKE’S LETTER.

“THE ELECTRIC TELEGRAPH — IS COOKE OR WHEATSTONE ITS INVENTOR?”

To the Editor of THE SCIENTIFIC REVIEW.

SIR,—IN your number for the 1st of June, I read your article on this subject with gratitude, for, although the general and engineering Press have, during the last eighteen months (with very few exceptions,) done me justice—only withheld previously from their being themselves misled—yours is the first scientific journal in *England* that has been sufficiently independent of influence to examine into and calmly discuss my claim to be “*entitled to stand alone*,” as the originator of the practical electric telegraph.

In your last number you say :—“ At length, in 1854, an article in the *Quarterly Review*, of the inspiration if not the authorship of which Mr. Cooke openly accuses his partner, confirmed the public opinion as to Professor Wheatstone’s exclusive merits. It is singular that Professor Wheatstone has not disowned the part which Mr. Cooke accuses him of having taken in prompting this one-sided article.”

A little further on you express almost a conviction that a man in the position of Sir Charles Wheatstone could not have stooped to such a course. Your words are, “ We cannot, however, believe for a moment that Sir C. Wheatstone would rest under such imputations as have been cast upon him in this

matter, unless he had the means of answering them. Why does he not do so? The public only desire to know the truth."

So appealed to, I feel myself bound to state the truth—the whole truth; and I trust it will be noticed by other scientific and literary journals, with such free discussion that the truth may be fully established, and that this painful controversy may be brought to a close.

My brother, in his pamphlet, "Authorship of the Electric Telegraph," which your article proves you have studied, closes his seventh letter, at page 54, with these words:—

* * * * *

"THE AUTHOR OF THE ESSAY WAS PROMPTED EXCLUSIVELY BY WHEATSTONE.—(The Editor of the *Quarterly Review*) THOUGHT THE CLAIMS OF FOREIGN DISCOVERERS UNDER-RATED;—(he) STUDIED THE QUESTION, AND ENDEAVOURED TO STATE IT WITH PERFECT TRUTH;—(but he) NEVER CONSIDERED THE QUESTION AS BETWEEN COOK AND WHEATSTONE, FOR THE SIMPLE REASON, THAT HE DID NOT KNOW THAT THE FORMER EVER DISPUTED THE PRETENSIONS OF THE LATTER."

The extract so prominently printed in small capitals may have been regarded as a veiled threat, not to be substantiated by evidence. You even state "your belief" that Sir C. Wheatstone must have "*the means of answering the imputations cast upon him.*" I trust he has, and if he will satisfy the public that the "author of the essay was NOT prompted exclusively by Wheatstone," I shall be satisfied also.

But a doubt has been thrown over my brother's assertion, and I feel bound to cast aside "extreme sentiments of etiquette" and vindicate my brother's accuracy by stating, on my own responsibility, THAT THE ABOVE EXTRACT IS TAKEN VERBATIM FROM THE WRITTEN WORDS OF THE EDITOR OF THE *Quarterly Review*, dated March the 5th, 1855.

The original document and the correspondence on the subject of that date, I am ready to produce before Professor Wheatstone and his friends, or before a committee of scientific and literary men—and surely there are such men—who

would wish to purge themselves from the stain of tacitly approving such an abuse of the press.

You will now be able to believe why Sir C. Wheatstone does not repel "the imputations cast upon him"—the imputations of having concealed from the writer of the article in the *Quarterly Review*, and from its editor, the very existence of the award of Sir I. Brunel, and of his warm friend and admirer, Professor Daniell, and of substituting on the Continent another document in the name of the award of the arbitrators;—and again, in an historical record of the practical realisation of a great scientific discovery, which was sure to spread through all civilised lands, of having secured, through his influence with the press, the "attribution of such honour" as may be due, but due to another. You say, "the public are anxious to honour the man through whom, in the language of the *Times* (October 10, 1866), 'the whole civilised world is now brought within an instant of time.'" Can I remain silent any longer? Can I not only relinquish every honourable thought that the public may direct to the man who originated the practical telegraph, but must I also submit quietly to the charge of trying to supplant my scientific colleague?

The award of the arbitrators—cordially and gratefully accepted by Sir C. Wheatstone under their eyes at the time—and the handwriting of the Editor of the *Quarterly Review*, speak for themselves. Can the truth so supported be gainsaid?

* * * * * "There is no escape from this dilemma." Nor is there an escape from the dilemma, that Sir C. Wheatstone "*prompted exclusively*" the essay in the *Quarterly Review*, for his own exclusive honour and glory.

I fully endorse the concluding passage of the paragraph of your last month's article:—

"Are such statements true or false; and if true, how can they be made to accord with the award of Sir M. I. Brunel and Professor Daniell? If to Wheatstone 'this country be indebted for having practically introduced and carried out the electric telegraph as a useful undertaking,' no profit can be

too great, no honour can be too high for him. But if, as the award distinctly says, 'Mr. Cooke is entitled to stand alone' in this, the appropriation of honour due to him, nay, *the mere omission to contradict the false attribution of such honour*, must entail upon him who would 'strut in borrowed plumes,' a shame great in proportion to the glory of the plumes which he is accused of having borrowed."

I am, sir, &c.,

WILLIAM FOTHERGILL COOKE.

Aberia, near Carnarvon, June 22, 1868.

. To this letter the following Editorial note was appended.

“SCIENTIFIC REVIEW.”

July, 1868 :—EDITORIAL REMARKS.

IN our brief article upon the subject matter of the above letter, we endeavoured to abstain from the expression of any strong view as to the point at issue between Mr. Cooke and Sir C. Wheatstone. We had only before us the statements and arguments on the one side, and were in ignorance as to the pleas which might be put forward by the other. The letter which Mr. Cooke himself has forwarded we print entire, guarding ourselves, nevertheless, against any responsibility as to the statements which it contains, and holding ourselves free to publish such communications as may be made to us on either side of the question. We cannot help expressing what every one that has looked into the controversy must feel, a strong suspicion that the case which is kept in the dark cannot be a good one. Mr. Cooke has not flinched from laying his case fully before the public ; he appears not only to have nothing to conceal, but even to be anxious that a flood of light should be poured upon this vexed question. Why does Sir C. Wheatstone decline the challenge ? The question is one that interests not scientific men only, but the whole of the great trading and manufacturing community. The honours of Sir Charles are fresh upon him ; why does he allow them to be tarnished by a breath of suspicion, when a fair, straightforward and manly statement of his claims might set him right with the public ? If his honours be well deserved, he can surely prove them to be so ; if not, he might, at least, secure still higher honour by a frank acknowledgment of claims better founded.—ED. S. R.

INVENTION OF THE ELECTRIC TELEGRAPH.

TO

*Editors of the Public Press, their Contributors and Correspondents,
Literary and Scientific.*

Gentlemen,—I respectfully but firmly urge upon your consideration that the influence brought to bear upon the Public Mind through the inadvertence of Editors, and the carelessness or favouritism of Writers, upon the above subject, has issued in the perversion of historical truth, and in great individual injustice.

As a safeguard to those who desire to treat that subject with justice and accuracy, all the Evidence relating to it has been published, and may be consulted at most of the Public Libraries in England and other countries.

The following Extracts from the SCIENTIFIC REVIEW show the extent to which the QUARTERLY REVIEW and other Periodicals have been pre-meditatedly “tampered” with, either under the influence of a “known name,” or by servile complaisance to the eminent scientific man, who has thus built up an unfounded reputation at the expense of his Coadjutor and Benefactor.

I confidently leave to the honour and conscience of the Public Press generally the example of the few, who have already vindicated its truthfulness and dignity, by explicitly condemning, in lieu of encouraging by silence, the system of “tampering” which has so greatly prevailed, especially in the interests of “the scientific favourites of the London coteries.”

With grateful thanks to THE FEW who have examined the Evidence, and manfully expressed their independent convictions,

I am, Gentlemen,

Your obedient servant,

T. FOTHERGILL COOKE.

Bath ; January, 1869.

probable that the electric telegraph would have been devoted to such employment only, for some time, but for the enterprise, science, and perseverance of Mr. COOKE. (Hear, hear.) In June, 1839, he completed his first line of telegraph from London to Drayton, and after this the system was gradually extended throughout Great Britain ; but it was not until later that the other states in the Old and New World availed themselves of the example which had been set in this country. The first line in America was laid between Washington and Baltimore, by a subsidy from Congress, in 1843.—*The Dublin Express*.—*The Atlantic Cable, Dinner to Mr. Bright, C.E. (now Sir Charles Bright, M.P.)—Speech of Sir CHARLES BRIGHT, 1857.*

V. It is obvious that Messrs. COOKE and WHEATSTONE have the sole merit of introducing the electric telegraph into England. Neither Mr. COOKE nor Mr. WHEATSTONE has received from the State the slightest recognition of their inestimable services.—*Melioria: a Quarterly Review of Social Science, Oct. 1858.—Editorial.*

VI. PERMIT me to recall the leading facts to your recollection. The award recorded my title as "originator of the undertaking," to "the exclusive management of the invention with the exclusive engineering department, as between ourselves, and all the benefits arising from the laying down of the lines and the manufacture of the instruments."

I will close my letter in the language of a concluding passage of my reply to your pamphlet of 1856 :—"The Award cannot be both true and false. If it is true, why have you not acted in accordance with it? If it is false, why did you put your name to a cordial and grateful acknowledgment of the correctness of facts stated in it? There is no escape from this dilemma, and though it is now, as I long since warned you it one day would be, beyond your power to do me justice without dishonour to yourself, a frank confession of your error will attach to your well-known name a fainter and less-enduring stigma than any renewed attempt to justify an inconsistent and disingenuous course of conduct."—*Cooke's Letter to Wheatstone; The Reader, Nov. 10th, 1866. [This powerful and exhaustive letter exhibits the whole sequence of facts from the beginning; it was written expressly for publication, and has been widely circulated by the Press. It has never been answered. It is printed at length in my pamphlet, "Authorship of the Telegraph," p. 63.—T. F. C.]*

VII. In your number of Nov. 10th, Mr. FOTHERGILL COOKE, in a frank and forcible letter addressed to Prof. WHEATSTONE, challenges that gentleman to refute his statements. Your readers impatiently await the Professor's reply, but he makes no sign.

A tacit acknowledgment scarcely harmonises with one's views of honesty, and tends to confirm the growing belief that Mr. COOKE has been defrauded of his title to public recognition, and establishes a painful stigma upon the reputation of Mr. WHEATSTONE.—*Letter by G. H.; The Reader, Dec. 1st, 1866.*

VIII. WHEN we consider the question as to whom Europe is indebted for the introduction of the telegraph, the credit must undoubtedly belong to Mr. W. F. COOKE. While philosophers, so to speak, were playing with the telegraph, and exhibiting it as a "possibility," Mr. COOKE grasped the electric toy, and converted it into one of the subtlest and most valuable agents the world has ever beheld. Many philosophers have invented electric telegraphs; many had foreseen their great use; but the one man of indomitable energy, perseverance, and fore-

sight, who took the matter up and forced the public into its recognition, is, undoubtedly, WILLIAM FOTHERGILL COOKE.

It was Mr. COOKE who first applied the attraction produced by Voltaic electricity to the descent of a clock train, to control its motion or to ring a bell.—CROMWELL F. VARLEY; *Dublin Express*, Nov. 21st, 1866.

IX. In 1841, MR. COOKE discovered independently that the earth acted as an excellent conductor of electricity. This fact had, as he afterwards learnt, been previously discovered by our own countryman, Sir WILLIAM WATSON, in 1747, and later by STEINHEIL.—*Letter by W. J. P.; The Reader*, Dec. 1st, 1866.

X. WITH such facts before us we are bound to say that we are much astonished at finding that the "*Times*"—*refusing to accept or to publish explanations—persists in demanding all the honours* for Prof. WHEATSTONE as the sole inventor of the electric telegraph. "*Palmarum qui meruit ferat.*" The balance of evidence is most decidedly in favour of Mr. COOKE. That justice will be done in the matter we are fully convinced. We know nothing personally of Mr. COOKE or Mr. WHEATSTONE, but we feel that it would be a great disaster to make a mistake in awarding honours upon an occasion of such great national importance.—*Preston Herald*, Nov. 10th, 1866, *Editorial*.

XI. THE pamphlet just published by Mr. W. F. COOKE goes far to show that the claims of his quondam *colaborateur*, although so strongly advocated by one leading journal (the *Times*), are not altogether above suspicion. Mr. COOKE grapples with the question boldly; no one can say that he does not "call a spade a spade."—*Army and Navy Gazette*, Nov. 17th, 1866, *Editorial*.

XII. WITH facts like these before us, not to speak of the great extent to which they have been accumulated by the Rev. T. F. COOKE, in his short but conclusive publication, it does seem singularly unjust to depreciate Mr. COOKE (in the *Times*).—*The Record*, Feb. 24th, 1868, *Editorial*.

XIII. THERE is no reason to question the claims of Mr. COOKE.—*Saturday Review*, Nov. 17th, 1866, *Editorial*.

XIV. MESSRS. COOKE and WHEATSTONE had many difficulties to contend with, but the energy and perseverance of Mr. COOKE finally overcame them all.—*Morning Post*, Nov. 26th, 1866, *Editorial*.

XV. THE idea of an electric telegraph had floated in the minds of scientific men for nearly 200 years before it was seized upon by the one who gave it life and practical bearing upon the interests and welfare of mankind—by, in fact, Mr. WILLIAM FOTHERGILL COOKE.

We have now said all that need be said upon this subject, perhaps, for we notice that the *Times* has not persevered in pressing the claims of Professor WHEATSTONE.—*Preston Herald*, Dec. 1st, 1866, *Editorial*.

XVI. WE must suppose Prof. WHEATSTONE's skilled scientific co-operation to have been highly important to the speedy successful carrying out of the practical enterprise first started in that shape by Mr. COOKE, but we cannot suppose the "energetic nature and shaping mind" of the latter to have had less of motive force in the detailed conduct of the enterprise than they undoubtedly had in the first determined pursuit of it as a practical enterprise at all.—*The Spectator*, Jan. 19th, 1867, *Editorial*.

XVII. COOKE deserves the title of Father of the Electric Telegraph, and will assuredly ever maintain the *première niche*. We do not claim for COOKE the invention of the electric telegraph *per se*, any more than we claim for GEORGE STEPHENSON the invention of railways; but we do claim for him alone the position of being the one to whom, before all others, the world is indebted for having practically introduced and carried out the electric telegraph as a useful undertaking, which has proved itself to be a work of universal grandeur and importance.

Russia may have her SCHELLING, Germany her STEINHEIL, America her MORSE, but they must all yield actual priority of practical construction and public use to WILLIAM FOTHERGILL COOKE.—*Engineering*, Feb. 15th, 1867, *Editorial*.

XVIII. It is to Mr. COOKE in reality that we owe the electric telegraph as a working scheme.—*The Lancet*, Mar. 28th, 1868, *Editorial*.

XIX. COOKE may be considered to occupy the same position in connection with the electric telegraph as does STEPHENSON in connection with the railway system.—*The Mining Journal*, Mar. 21st, 1868, *Editorial*.

XX. It will ever be felt that the man who projected and who reduced to practice the first electric telegraph ought not to be forgotten. Mr. WILLIAM FOTHERGILL COOKE may not possess the influence required for attracting the notice of the Government to his just and admitted claims, but the public generally, and the great commercial cities of the kingdom more especially, should unite in acknowledging his great services to the commercial world, and to the constantly recurring exigencies of private life.—*The Court Circular*, Jan. 25th, 1868, *Editorial*.

XXI. SIR CHARLES WHEATSTONE has received the honour of knighthood, though not until knighthoods and baronetcies had been conferred for the electric cable. Mr. COOKE's claim should not be overlooked. If a knighthood be not acceptable to him, there are other ways of doing him justice as well as honour.—*The London and County Review*, Ap., 1868, *Editorial*.

XXII. Mr. COOKE's brother has now placed the matter before the world in such a manner as to render it impossible for the claims of Prof. WHEATSTONE ever again to be put forward with any prospect of success. What WATT did for the steam-engine, what STEPHENSON did for railroads, Mr. W. F. COOKE did for telegraphy.—*Ipswich Journal*, Ap. 4th, 1868, *Editorial*.

XXIII. Now the Government is proposing to purchase the telegraph of the United Kingdom, the moment is opportune for the unequivocal recognition, already too long delayed, of the gentleman to whom the world is indebted for its practical realisation. If in the month of March, 1836, this practical realisation sprang less perfect in its finish from the inventive and comprehensive brain of Mr. WILLIAM FOTHERGILL COOKE, than did Minerva from that of Jupiter, it was scarcely less complete in its equipment. It ought to have been considered by the injudicious friends, who would exalt Sir CHARLES WHEATSTONE to a false position, that the collapse of exorbitant claims, sudden and complete in the same proportion as they exceeded the truth, might have endangered his just reputation. It will scarcely be believed that the original documents on both sides of this question, long since published by Mr. COOKE, have been absolutely ignored by those who have professed to inform the public mind; yet so it is.—*Mining Journal*, Ap. 11th, 1868, *Editorial*.

XXIV. I BELIEVE no man, not even Mr. CYRUS FIELD himself, has ever been able to comprehend the magnitude of the great discovery, and of the great gift to mankind which we have received through the instrumentality of him, of his friends, and the scientific men by whom he has been assisted. (Cheers.) I say it with all sincerity, that my heart is too full when I look at this question to permit me to speak to it in the manner in which I feel. We all know that there are in our lives joys, and there are sometimes sorrows, that are too deep for utterance, and there are manifestations of the goodness, of the wisdom, of the greatness of the Supreme, which all our modes of speech are utterly unable to describe. We can only stand and look on, and wonder and adore. But to the human agencies concerned we may more freely speak. I honour the great inventors. In their lifetime they seldom receive all the consideration to which they are entitled. An old and valued friend of mine is one of them—I speak of Mr. WILLIAM FOTHERGILL COOKE. I do not see him here. (A Voice : “Oh, yes, he is here.”) Then I hope he is able to take consolation after his long days of patient investigation, from the feeling which he has seen exhibited here to-night, and from the services which have sprung to the world from the invention of which he certainly was one of the chief discoverers. I honour, too, Professor WHEATSTONE, Professor MORSE, and I honour all those men of science who have made this great marvel possible.—*Banquet to Mr. Cyrus Field; Speech of Mr. JOHN BRIGHT, M.P.—The Daily News, July 2nd, 1868.*

XXV. FROM the day Mr. COOKE witnessed the experiments in Prof. MONCKE'S class-room, he forsook the dissecting knife, threw aside his modelling tools, and applied himself to the realisation of his conception. With such ardour and devotion did he labour, and such skill and ingenuity did he bring to the work, that within three weeks he had constructed a telegraph by which twenty-six different signals were designated. In that short time he had also invented the detector, by which injury to the wires was readily traced, and the alarm. Both these contrivances were of the utmost value—indeed, without them electric telegraphy would be impracticable—and are still in use.—*Triumphs of Invention; by J. Hamilton Fyfe, 1868.*

XXVI. THIS volume (“Authorship of the Telegraph”) apart from the documentary quotations, contains a large amount of information upon the grand discovery and invention of the electric telegraph. It is hoped that the Government do not intend to overlook the claims of Mr. COOKE as the introducer of the practical telegraph. The Society of Arts awarded their fourth gold medal to Mr. COOKE and Mr. WHEATSTONE; but the latter gentleman, cordially acknowledging Mr. COOKE'S claim for “the practical introduction,” did not even claim his duplicate medal.—*The Leisure Hour, Sept. 1868, Editorial.*

XXVII. COOKE, WILLIAM FOTHERGILL, son of WILLIAM COOKE, Esq., M.D., of Durham, was born at Ealing, Middlesex, in 1806, and, having received his education at Durham School and the University of Edinburgh, was appointed in 1826 to the East Indian army, in which he held various staff appointments till 1831. On his return home he devoted his time to the study of anatomy and physiology at Paris and Heidelberg, and modelling his anatomical dissections for the illustration of his father's lectures at Durham University. In March, 1836, directing his attention to the electric telegraph, he occupied himself exclusively with it for many years. He entered into partnership with Professor WHEATSTONE, and formed, in conjunction with Mr. J. L. RICARDO, M.P., the first telegraph

company, of which he is still a director. The first telegraph line in England was constructed by Mr. COOKE from Paddington to West Drayton, on the Great Western Railway, in 1838-39. In 1840 he established the telegraph on the Black-wall Railway, and in 1841 a short line from the Queen-street Station at Glasgow, through the tunnel to the engine-house at Cowairs, on the railway to Edinburgh. In 1842-3 the line from West Drayton was continued to Slough; in 1843 two short lines were made in Ireland and in England; and in 1844 one of considerable length, from London to Portsmouth, for Government.—*Routledge's Men of the Time*, 1868.

XXVIII. ALBERT GOLD MEDAL OF THE SOCIETY OF ARTS.

THE CHAIRMAN, in presenting the Albert Gold Medal, which was awarded to Messrs. COOKE and WHEATSTONE, for the practical introduction of the Electric Telegraph, not only to this country, but to every country in the world, expressed his regret at the absence of Professor WHEATSTONE. It was a cause of just pride to this country that we should have been the first to introduce this discovery to the world, one fraught with such inestimable blessings to mankind. It was a special gratification to him to be the medium of presenting this medal to one with whom he had been long on terms of close personal friendship. He now begged to present to Mr. FOTHERGILL COOKE the Albert Gold Medal of the Society.

Mr. FOTHERGILL COOKE said he could not accept this award in silence. It was one of the highest honours that could be conferred upon any individual, associated as it was with the name and the memory of a Prince who was for so many years President of this Society, and who was so much beloved for his personal goodness, and for the warm interest which he ever took in all that tended to the benefit of this country. Moreover, he felt not a little proud of having his name placed in the same roll of honour with those of Sir ROWLAND HILL and Professor FARADAY. The Chairman had mentioned this evening that it was in this country the Electric Telegraph was first introduced. He hoped that would not be forgotten, for, besides being an individual source of gratification to himself, he hoped the nation would one day feel proud of having set the example in this respect to the other countries of the world. He returned his grateful thanks for the high honour which had been conferred upon him.—*Journal of the Society of Arts*; Nov. 22nd, 1867.

XXIX. EXTRACT FROM THE HISTORICAL ARTICLE

ON THE ELECTRIC TELEGRAPH,

BY THE LATE

SIR DAVID BREWSTER, K.H., LL.D., F.R.S., &c.

PUBLISHED IN THE

"NORTH BRITISH REVIEW," FEB. 1855, VOL. XXII.

WE come now to the most interesting part of our subject, namely, the history of the introduction of the Electric Telegraph into England; and we regret that a recent attempt to vitiate the history of the Electric Telegraph in England * should give this discussion a controversial character.

About two years ago we became possessed of a printed document † containing the views, or rather the decision, of two of our greatest men upon this very subject; and we intended to have placed this document before our readers without any argument of our own, as the basis of the few observations which we meant to oppose to the vitiated history to which we have referred. We have been fortunate enough, however, to obtain, only this day, the copy of a pamphlet ‡ which states the grounds upon which the above decision was pronounced, and which informs us that all the documents and drawings relating to the subject are now in the press.

Mr. WILLIAM FOTHERGILL COOKE, to whom we owe the introduction of the Electric Telegraph into England, and who was the first English inventor of the telegraphic apparatus, held a commission in the Indian army. Having returned from India on leave of absence, and on account of his health, he afterwards resigned his commission and went to Heidelberg to study anatomy. In the month of March, 1836, Professor MONCKE, of Heidelberg, exhibited an electro-telegraphic experiment.—[Description of Moncke's simple experiment is here given.] Mr. COOKE was so struck with this experiment that

* In the *Quarterly Review*.—T. F. C.

† The Brunel Award.—T. F. C.

‡ "The Electric Telegraph: Was it Invented by Professor Wheatstone?" By William Fothergill Cooke, Esq., London, 1854.

he immediately resolved to apply it to purposes of higher utility than the illustration of a lecture, and he abandoned his anatomical pursuits, and applied his whole energies to the invention of a Practical Electric Telegraph. Within three weeks in April, 1836, he made his first electric telegraph, partly at Heidelberg and partly at Frankfort. [Mr. COOKE's first needle telegraph is here described.] Mr. COOKE soon afterwards made another electric telegraph of a different construction. He had invented a Detector, for discovering the locality of injuries done to the wires, the Reciprocal Communicator, and the Alarm. All this was done in the months of March and April, 1836; and in June and July of the same year, he recorded the details of his system in a manuscript pamphlet, from which it was obvious that, in July, 1836, "he had wrought out his practical system from the minutest official details up to the records and extended ramifications of an important political and commercial engine."

When his telegraphic apparatus was completed, he showed it, in November, 1836, to Mr. FARADAY, and he afterwards submitted it and his pamphlet, in January, 1837, to the London and Manchester Railway Company, with whom he made a conditional arrangement, with the view of using it on the long tunnel at Liverpool. In February, 1837, when he was about to apply for a patent, he consulted Mr. FARADAY and Dr. ROGET on the construction of the electro-magnet employed in a part of his apparatus, and the last of these gentlemen advised him to consult Professor WHEATSTONE. He accordingly went to him on the 27th February, 1837. [The first interview between them, when WHEATSTONE had nothing available but his key-board, and was "practically behind MONCKE" is here described.]

The result of this interview was the formation of a partnership in May, 1837, when it was agreed that in the joint patent Mr. COOKE's name should stand first; that Mr. WHEATSTONE should pay £80, and Mr. COOKE only £50 of the expense of the patent; and that an allowance of £130 should be made to Mr. COOKE for his past experiments.

After these arrangements were completed, and the invention had become the subject of conversation, it was ascribed to Mr. WHEATSTONE alone. Mr. COOKE's name, though standing first in the patent, and though undoubtedly the original inventor, was never

mentioned; and to such a length did this go, that in an account of the Electric Telegraph published in *Chambers's Edinburgh Journal* for the 25th July, 1839, and obtained from conversation with Mr. WHEATSTONE,* Mr. COOKE's name never appeared. The inventions of Mr. ALEXANDER BAIN, a most meritorious individual, the inventor of electric clocks, and of the beautiful electric telegraph which we have explained,† were all ascribed to Mr. WHEATSTONE; and the members of the different scientific societies and coteries in London, the dispensers of contemporary fame, and to whom Mr. COOKE and Mr. BAIN were unknown, were the tools by which these acts of injustice were perpetrated. Mr. COOKE, a soldier, an educated man, and a gentleman, was represented as a mechanic, and Mr. BAIN as a workman, who had pilfered the inventions of Mr. WHEATSTONE.

The day of retribution, however, came, *as it always comes*, both in defence of Mr. COOKE and Mr. BAIN. Mr. COOKE attempted in vain to have these erroneous impressions effaced by the help of Mr. WHEATSTONE himself, but having failed, he insisted upon having it ascertained by arbitration. The arbiters were Sir ISAMBARD BRUNEL named by Mr. COOKE, and Professor DANIELL, of King's College, by Mr. WHEATSTONE, both colleagues of Mr. WHEATSTONE in the Royal Society, and Mr. DANIELL a brother professor of Mr. WHEATSTONE in King's College—an important remark, the reason of which will soon appear. Mr. COOKE was a member of none of the London societies or coteries, but felt himself safe, as he might well do, in the high talents and established character of Sir I. BRUNEL.

In the course of five months the arbiters examined all the documents submitted to them, and on the 27th April, 1841, they made the following award.‡—[The award and letter of acceptance are here given *in extenso*.]

With such a distinct verdict from so distinguished a jury, we should have thought that this controversy was for ever closed. The parties expressed their satisfaction, and it was to be presumed that the two arbiters, whose European reputation was at stake, had

* "Exclusively prompted by Wheatstone," as the indignant editor of the *Quarterly* writes.—T. F. C.

† In the preceding part of this article.—T. F. C.

‡ See Award and letter of acceptance, p. 41, *infra*.—T. F. C.

conscientiously discharged their duty to the real claimants and to the public. This, however, was not the result of the award. Mr. COOKE claimed nothing more than was adjudged to him, while Mr. WHEATSTONE again attempted to monopolise the honour of being the inventor of the electric telegraph. His numerous scientific friends propagated the tale, and against such odds the real and little-known inventor had no chance of protection. An humble inventor or discoverer in the provinces, or in the private circles of the metropolis, has no chance against the combination and partisanship of London institutions; but, as happened before, a day of retribution again arrives for the protection of the helpless and the establishment of truth. In the eagerness to seize the bubble reputation it often bursts in the grasp. In the present instance a fact transpires, in the ardour of pursuit, which speaks volumes on the subject.

Under these circumstances, Mr. COOKE applies for redress to Mr. WHEATSTONE, his partner in a lucrative concern, and on the 16th Jan., 1845, thus addresses him :—

“ It is now nearly two years since I remonstrated with you on the endeavours which your friends were making to undermine the award of Sir ISAMBARD BRUNEL and Mr. DANIELL, of April, 1841; but as these remonstrances were met by the assurance of your solicitor (made in your name and by your expressed desire) in his letter of the 20th May, 1843, that there was no truth in the report that you denied your full consent to the declaration contained in the printed paper—an assurance further confirmed by his letter of the 27th June, in these words :—‘ Mr. WHEATSTONE does not desire to escape from a single conclusion which the Award warrants,’—all I could do was to express myself satisfied with an explanation so unqualified.

“ The same cause of complaint has, however, been repeatedly obtruded upon me since. And I now hear from your own lips that you have absolutely armed yourself with a letter from Mr. DANIELL to counteract a certain construction of the Award, which you consider objectionable !

“ This is, indeed, an alarming document to hold in reserve; and how Mr. DANIELL could reconcile any such letter with the character of a Judge, remains to be explained.”

If the letter from Mr. DANIELL thus singularly referred to is a real document, intended to affect the history of science, and the

rights of an individual, Mr. COOKE and the public ought to call for its production.* . . . We willingly adopt the liberal sentiment of Mr. COOKE, that if he "did express himself incautiously in writing to his friend, no one acquainted with his manly and upright character can suppose that he intended to sanction a clandestine use of his letter to assist Mr. WHEATSTONE," or to injure Mr. COOKE. Ignorant though we be of the nature of this singular document, we have no difficulty, if it was written by Professor DANIELL, in predicting its contents. Its object, doubtless, was to sweeten the bitter pill of the Award. It was an opiate tenderly administered to disappointed vanity—a curb, perchance, to that morbid appetite for fame, which respects neither individual rights nor social feeling. By this anticipation of its purpose, we at once protect the character of its author, and the rights of the individual whom it has been brought forward to assail.

The future history of this remarkable partnership is soon told. Mr. COOKE pursued with unflinching ardour his scheme of making the Electric Telegraph a work of "national importance," and being prepared by his own inventions, and by the joint invention in COOKE and WHEATSTONE's patent, he took steps in the autumn of 1845 to organise a joint-stock company, which he effected in 1846. This company, under the name of the Electric Telegraph Company, applied to Parliament in the session of 1846 for a Bill of Incorporation. This Bill was opposed by Mr. BAIN, of Edinburgh, who asserted in his petition that he had invented an electric clock, and an electric printing telegraph—that he had communicated these inventions confidentially to Mr. WHEATSTONE, and that the latter had

* So forced into a corner, Wheatstone printed the letter at last in 1855; it was never verified, and was not published till after Prof. Daniell's death. The mystification of secrecy, its only charm, was dispelled by publicity. Its object, correctly foretold by Sir David Brewster, was "to sweeten the bitter pill of the Award," but the Award was in no way affected by it.

What a lamentable picture of habitual, day-by-day meannesses is disclosed by these incessant subterfuges, which one after another have come to light! *How many more remain to be unveiled?* From their dates it is evident that the divided mind of this great philosopher was ever vacillating between scientific research and the bolstering up, under ever increasing difficulties, of a fictitious reputation—the penalty of "a morbid appetite for fame which respects neither individual rights nor social feeling."

On Prof. Daniell's letter, see "Authorship of the Telegraph," pp. 47—49.—T F. C.

claimed them as his own. Notwithstanding this opposition, the directors of the company carried their Bill, though not without difficulty, through the House of Commons, but when it came to the House of Lords, Mr. BAIN's statement, and the evidence he gave in its support, made such an impression on the members of the Lords' committee that, on the afternoon of its third sitting, the Duke of BEAUFORT, as chairman, intimated to the Counsel of the Electric Telegraph Company that they should make an arrangement with Mr. BAIN, "hinting," as Mr. COOKE says, "pretty plainly that their Bill might be thrown out if they declined to do so." Mr. BAIN accordingly received, we believe, £12,000, and thus, to Mr. WHEATSTONE's extreme displeasure, became associated with the company, binding himself to give them the use of his inventions. About the same time the directors had, unluckily, made an agreement with Mr. HENRY MAPPLE, in ignorance that this person had a similar controversy with Mr. WHEATSTONE respecting an improved alarm and an improved telegraphic rope, and in consequence of these untoward circumstances, Mr. WHEATSTONE sent in an account of his expenses, and retired altogether from the company's service.

Thus liberally rewarded—[by the payment, on his own terms, of £30,000]—for half of the joint patent held by Mr. COOKE and himself, one would have thought that all further controversy was at an end. The company succeeded beyond their most sanguine expectations, and Mr. WHEATSTONE became discontented with his reward. He claimed to be the inventor of the Electric Telegraph! He forgot the rights of his partner and benefactor, as conceded and signed by himself, and as adjudicated by Sir ISAMBARD BRUNEL and Professor DANIELL. He forgot the concession of £12,000 by the Lords' committee to Mr. BAIN for his electric clock, and his beautiful electric telegraph; and those eminent individuals ceased to be named but as mechanics and workmen, whom he had taken into his service! Mr. COOKE, whose forbearance we cannot but admire, maintained a dignified silence as long as the injuries which were done to him were whispered in private, or circulated in scientific coteries. The time, however, at last came—the crisis in Mr. WHEATSTONE's history as well as in his—when he was dragged before the public by a representative of Mr. WHEATSTONE's feelings

as well as opinions,* and compelled to appeal to its tribunal in a voice as articulate as the railway whistle or the electric thunder.

An article on the Electric Telegraph appeared in the *Quarterly Review* for June, 1854, in which the claims of MORSE and STEINHEIL, and COOKE and BAIN, are unceremoniously thrown overboard, and Mr. WHEATSTONE pronounced the inventor of the Electric Telegraph!! That such a perversion of scientific history, and such a violation of recorded truth should have appeared in such a respected Journal, has greatly surprised us; and we confess that we feel as much for the author who has permitted himself to be a dupe, as we do for Mr. COOKE, whom that dupe has so wantonly made a victim. Roused by this attack upon his honour, and this attempt to wrest from him not what he claims, but what was given to him by the solemn decree of two of the most distinguished men of the day, and one of them Mr. WHEATSTONE's particular friend, Mr. COOKE has been driven to write the pamphlet to which we have referred, and to publish in support of its statements a volume of documents, illustrated by numerous plates.

Having been the first individual who introduced the Electric Telegraph into England,—having been the first constructor of a working telegraph and various pieces of telegraphic apparatus invented by himself; having availed himself of Mr. WHEATSTONE's talents for completing the particular telegraph patented by Messrs. COOKE and WHEATSTONE,—having paid Mr. WHEATSTONE £30,000 for his interest in the joint patent,—having established beyond the power of challenge his claim to “*stand alone as the gentleman to whom this country is indebted for having PRACTICALLY INTRODUCED AND CARRIED OUT THE ELECTRIC TELEGRAPH AS A USEFUL UNDERTAKING,*” Mr. COOKE succeeded, in 1846, in establishing the Electric Telegraph Company, of which he is now one of the principal Directors.—*North British Review*, February 1855, vol. xxii., pp. 570-579.

* The eyes of Sir David Brewster were pretty widely opened, but it did not occur even to him to suspect that the *Quarterly* article was “prompted exclusively by Wheatstone.”—T. F. C.

*** The foregoing extracts combine to show how largely scientific and literary opinion, publicly expressed, has changed, *and is changing daily*, since the nature, amount, and weight of testimony in proof of Mr. COOKE's rights, especially as contained in recent publications, have elucidated and vivified the BRUNEL AWARD.

Will no one Champion come forward to fight openly for knightly reputation, *even though* Sir CHARLES WHEATSTONE *decline to break a lance in defence of his own honesty?*

Long and imposing is the above list of public writers of the highest reputation, who have stimulated Sir CHARLES to rebut the charges in which he has been so sternly denounced "in a voice articulate as the railway whistle or the electric thunder."—T. F. C.

AWARD
OF
SIR MARC ISAMBARD BRUNEL
AND
PROFESSOR DANIELL.

As the Electric Telegraph has recently attracted a considerable share of public attention, our friends, Messrs. Cooke and Wheatstone, have been put to some inconvenience, by a misunderstanding which has prevailed respecting their relative positions in connexion with the invention. The following short statement of the facts has, therefore, at their request, been drawn up by us the undersigned Sir M. Isambard Brunel, Engineer of the Thames Tunnel, and Professor Daniell, of King's College, as a document which either party may at pleasure make publicly known.

In March, 1836, Mr. Cooke, while engaged at Heidelberg in scientific pursuits, witnessed, for the first time, one of those well-known experiments on electricity, considered as a possible means of communicating intelligence, which have been tried and exhibited from time to time, during many years, by various philosophers. Struck with the vast importance of an instantaneous mode of communication, to the railways then extending themselves over Great Britain, as well as to government and general purposes, and impressed with a strong conviction that so great an object might be practically attained by means of electricity, Mr. Cooke immediately directed his attention to the adaptation of electricity to a practical system of Telegraphing; and, giving up the profession in which he was engaged, he, from that hour, devoted himself exclusively to the realization of that object. He came to England in April, 1836, to perfect his plans and instruments. In February, 1837, while engaged in completing a set of instruments for an intended experi-

mental application of his Telegraph to a tunnel on the Liverpool and Manchester Railway, he became acquainted, through the introduction of Dr. Roget, with Professor Wheatstone, who had for several years given much attention to the subject of transmitting intelligence by electricity, and had made several discoveries of the highest importance connected with this subject. Among these were his well-known determination of the velocity of electricity, when passing through a metal wire; his experiments, in which the deflection of magnetic needles, the decomposition of water, and other voltaic and magneto-electric effects, were produced through greater lengths of wire than had ever before been experimented upon; and his original method of converting a few wires into a considerable number of circuits, so that they might transmit the greatest number of signals, which can be transmitted by a given number of wires, by the deflection of magnetic needles.

In May, 1837, Messrs. Cooke and Wheatstone took out a joint English patent, on a footing of equality, for their existing inventions. The terms of their partnership, which were more exactly defined and confirmed in November, 1837, by a partnership deed, vested in Mr. Cooke, as the originator of the undertaking, the exclusive management of the invention, in Great Britain, Ireland, and the Colonies, with the exclusive engineering department, as between themselves, and all the benefits arising from the laying down of the lines, and the manufacture of the instruments. As partners standing on a perfect equality, Messrs. Cooke and Wheatstone were to divide equally all proceeds arising from the granting of licenses, or from the sale of the patent rights; a per-centage being first payable to Mr. Cooke, as manager. Professor Wheatstone retained an equal voice with Mr. Cooke in selecting and modifying the forms of the telegraphic instruments, and both parties pledged themselves to impart to each other, for their equal and mutual benefit, all improvements, of whatever kind, which they might become possessed of, connected with the giving of signals, or the sounding of alarums, by means of electricity. Since the formation of the partnership, the undertaking has rapidly progressed, under the constant and equally successful exertions of the parties in their distinct departments, until it has attained the character of a simple and practical system, worked out scientifically on the sure basis of actual experience.

While Mr. Cooke is entitled to stand alone, as the gentleman to whom this country is indebted for having practically introduced and carried out the Electric Telegraph as a useful undertaking, promising to be a work of national importance ; and Professor Wheatstone is acknowledged as the scientific man, whose profound and successful researches had already prepared the public to receive it as a project capable of practical application ; it is to the united labours of two gentlemen so well qualified for mutual assistance, that we must attribute the rapid progress which this important invention has made during the five years since they have been associated.

MC. ID. BRUNEL.

J. F. DANIELL.

London, 27th April, 1841.

London, 27th April, 1841.

GENTLEMEN,

WE cordially acknowledge the correctness of the facts stated in the above document, and beg to express our grateful sense of the very friendly and gratifying manner in which you have recorded your opinion of our joint labours, and of the value of our invention.

We are, Gentlemen,

With feelings of the highest esteem,

Your obedient servants,

WILLM. F. COOKE,

C. WHEATSTONE.

Sir M. Isambard Brunel, and

J. F. Daniell, Esq., Professor, &c., &c.

POSTSCRIPT.
23 AP 69

THIS reprint was kept back to await the January number of the *Scientific Review*, in case Sir CHARLES WHEATSTONE should put in an appearance even at that last hour.

The December and January numbers are now before me.

Sir CHARLES WHEATSTONE has not appeared.

T. F. C.

January, 1869.

THE ELECTRIC TELEGRAPH,
WAS IT INVENTED BY
PROFESSOR WHEATSTONE?

BY

WILLIAM FOTHERGILL COOKE, ESQ.

THE PAMPHLET OF 1864;

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AUTHORSHIP
OF THE
PRACTICAL
ELECTRIC TELEGRAPH,
IN VII. LETTERS,
EDITED IN ASSERTION OF
HIS BROTHER'S RIGHTS.

BY
THE REV. THOMAS FOTHERGILL COOKE, M.A.

"While philosophers were playing with the telegraph, and exhibiting it as a 'possibility,' Mr. COOKE grasped the electric toy, and converted it into one of the subtlest and most valuable agents the world has ever beheld."—CROMWELL F. VARLEY, *Dublin Express*, Nov. 21st., 1866. (Page 69.)

"Mr COOKE, who, far more even than WHEATSTONE, deserves the title of father of the Electric Telegraph, will assuredly ever maintain the premiere niche in the rôle of the scientific and mechanical benefactors of the human race."—*Engineering Review*, Feb. 15, 1867. (Page 92.)

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